

REMARKS

Claims 1-18, 37-41, 44, 55-69 and 81 are currently pending in the captioned patent application, of which claims 1, 7, 37, 55, 68 and 81 are independent claims. Claims 1, 7, 13, 37, 55, 68 and 81 have been amended. Based on the present amendments and for at least the reasons set forth below, applicant respectfully requests reconsideration of the Office Action objections and rejections.

Section 102 Rejections

A claim rejection based on anticipation under §102 requires that a single prior art reference disclose each and every element of the claimed invention. *See* MPEP § 2131 (stating that a claim is anticipated only if each and every element as set forth in the claim is disclosed in a single prior art reference).

Rejections in view of Knobloch / Gargas / Raines

§102(b) Rejections in View of Knobloch

Claims 1, 4, 6-7, 10, 12, 37, 40, 44, 55, 58, 60-63, and 65-67 stand rejected under 35 U.S.C. §102(b) in view of a patent issued to Knobloch et al. (U.S. Pat. No. 3,043,499). As amended, claim 1 recites in pertinent part:

A valve assembly comprising:

a first check valve..., wherein the application of positive pressure from an inlet/outlet port at a common refill/evacuation location causes fluid to flow from the common refill/evacuation location through said first check valve into said fluid system;

a second check valve..., wherein the application of negative pressure from the inlet outlet port at the common refill/evacuation location causes fluid to flow from said fluid system through said second check valve into the common refill/evacuation location...

the inlet/outlet port in direct fluid communication with said inlet of said first check valve and in direct fluid communication with said outlet of said second check valve at the common refill/evacuation location; and,

a flow control valve in direct fluid communication with the inlet/outlet port.

Claim 1 has been amended to add the feature of “a flow control valve in direct fluid communication with the inlet/outlet port.”

Among other elements, Knobloch does not disclose, teach, or suggest “a flow control valve in direct fluid communication with the inlet/outlet port,” as recited in claim 1. In rejecting claim 1, the Examiner cites Figure 2 of Knobloch and states:

The recirculation circuit includes a “valve assembly comprising: a first check valve (outlet check valve 7) structured to permit fluid flow therethrough in response to application of positive pressure at an inlet of said first check valve (7), further comprising an outlet of said first check valve (7) being in fluid communication with at least a portion (at supply conduit 9) of a fluid system; wherein the application of positive pressure from an inlet/outlet port (4) at a common refill/evacuation location (chamber 5) causes fluid to flow from the common/refill/evacuation location through said first check valve (7) into said fluid system: a second check valve (inlet check valve 6) having an outlet in fluid communication with said inlet of said first check valve (7), said second check valve (6) being structured to permit fluid flow therethrough in response to application of negative pressure at said outlet of said second check valve (6), further comprising an inlet of said second check valve (6) being in fluid communication with a portion (at return conduit 8) of said fluid system, wherein the application of negative pressure from the inlet/outlet port (4) at the common refill/evacuation location (5) causes fluid to flow from said fluid system (from conduit 8)

through said second check valve (6) into the common refill/evacuation location (5); and , the inlet/outlet port (where conduit 4 enters chamber 5) in direct fluid communication with said inlet of said first check valve (7) and in direct fluid communication with said outlet of said second check valve (6) at the common refill/evacuation location (100)" as recited in claim 1.

Office Action at pgs. 2-3.

Applicant respectfully submits that Knobloch does not disclose "a flow control valve in direct fluid communication with the inlet/outlet port." The Examiner cites "where conduit 4 enters chamber 5" in Knobloch as the inlet/outlet port of claim 1. Office Action at pg. 3. In Knobloch, the intersection of the conduit 4 and the chamber 5 is in fluid communication with the reciprocating cylinder 1, the first check valve 7, and the second check valve 6 of Knobloch, but is not in fluid communication with a flow control valve, as no flow control valve is disclosed in Knobloch.

Knobloch discloses a device "for circulating gaseous media...under high pressure in chemical processes." Knobloch at col. 1, lines 15-17. In other words, Knobloch simply recirculates the gases within the system. Knobloch does provide for introduction of new gas into the system through a supply pipe 12, but this pipe is only for supplying fresh gas to the system of Knobloch. See Knobloch at col. 3, lines 44-51. The flow control valve of amended claim 1 allows the device of the present application to perform fluid evacuation and fluid filling procedures from the inlet/outlet port. Knobloch cannot function to perform any fluid evacuation operation, let alone the kinds of fluid evacuation procedures that can be accomplished by the assembly recited in claim 1. Applicant respectfully submits that for at least this reason, claim 1 is not anticipated by Knobloch.

Each of independent claims 7, 37, 55, 68, and 81 are allowable for at least reasons analogous to those described above with regard to claim 1. Furthermore, claims 2-6, 8-18, 38-41, 44, 56-67, and 69 depend from, either directly or indirectly, one of independent claims 1, 7, 37, 55 or 68, and are therefore allowable for the same reasons as the independent claims.

§103(a) Rejections in View of Knobloch

Claims 13, 16, and 18 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Knobloch. As detailed above, Knobloch does not teach all of the elements of amended claim 1, and, for analogous reasons, does not teach all of the elements of claims 7 and 13. Claims 7 and 13 are not anticipated by Knobloch and the defects of Knobloch are not cured by the duplication of the valve assembly as cited by the Examiner. Therefore, applicant submits that claims 13, 16, and 18 are allowable. Claims 13, 16, and 18 depend from independent claims 7 and 13, which are not anticipated as described above. Therefore, dependent claims 13, 16, and 18 are not obvious by virtue of their dependence from claims 7 and 13, and on their own merits.

§103(a) Rejections in View of Knobloch / Gargas

Claims 2, 3, 8-9, 38-39, 56, 57, 64, 68-69 and 81 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Knobloch in view of a patent to Gargas (U.S. Pat. No. 4,684,334). The Examiner has failed to meet the burden of establishing a prima facie case of obviousness. As admitted by the Examiner, Knobloch does not disclose “said fluid system portion includes at least a pre-filter portion...being in communication with at least one filter.” See Office Action at pg. 14. The device disclosed in Gargas is an “[i]nlet valve assembly for a

paint [s]prayer.” See Gargas at Abstract. The device of Gargas does not teach or suggest “a flow control valve in direct fluid communication with the inlet/outlet port.” Accordingly, Gargas does not cure the deficiencies in Knobloch.

The Examiner states that:

It would have been obvious at the time of the invention was made to a person having ordinary skill in the art to employ in Knobloch et al. in conduit 4 and/or 4a filter element thus forming a “pre-filter portion” for the purpose of filtering out contamination prior to fluid utilization by the downstream system thus preventing blockage of the system by such filtered contamination as recognized by Gargas.

See Office Action at pg. 14.

Claims 2, 3, 8-9, 38-39, 56, 57, 64, and 68-69 depend from independent claims 1, 7, 37, 55 and 68, and claim 81 is based upon claim 1, which are not anticipated as described above. Therefore, dependent claims 2, 3, 8-9, 38-39, 56, 57, 64, and 68-69 are not obvious by virtue of their dependence from claims 7, 55 and 68, and on their own merits.

As outlined above, Knobloch does not teach all of the elements of claim 1, and, for analogous reasons, does not teach all of the elements of claim 81. Claim 81 is not anticipated by Knobloch and the defects of Knobloch are not cured by Gargas. Therefore, applicant submits that claim 81 is allowable.

Rejections in view of Raines / Knobloch

§102(b) Rejections in View of Raines

Claims 1 and 4-6 stand rejected under 35 U.S.C. §102(b) in view of a patent issued to Raines (U.S. Pat. No. 4,246,932). As amended, claim 1 recites in pertinent part:

a first check valve structured to permit fluid flow therethrough in response to application of positive pressure at an inlet of said first check valve, further comprising an outlet of said first check valve being in fluid communication with at least a portion of a fluid system, wherein the application of positive pressure from an inlet/outlet port at a common refill/evacuation location causes fluid to flow from the common refill/evacuation location through said first check valve into said fluid system;

a second check valve having an outlet in fluid communication with said inlet of said first check valve, said second check valve being structured to permit fluid flow therethrough in response to application of negative pressure at said outlet of said second check valve, further comprising an inlet of said second check valve being in fluid communication with at least a portion of said fluid system, wherein the application of negative pressure from the inlet/outlet port at the common refill/evacuation location causes fluid to flow from said fluid system through said second check valve into the common refill/evacuation location, and wherein said outlet of said first check valve is in fluid communication with said inlet of said second check valve; and,

the inlet/outlet port in direct fluid communication with said inlet of said first check valve and in direct fluid communication with said outlet of said second check valve at the common refill/evacuation location...

(emphasis added).

Claim 1 has been amended to address the Examiner's concerns detailed in the

Office Action which state:

there is no language in the claim requiring the outlet of check valve 152 to be in fluid communication with the inlet of check valve 150, thus the claim embodies the embodiment disclosed in applicants figures 32-35 and 38-40 in which the "portion of the fluid system" is not connected to the "fluid reservoir"

Office Action at pg. 11. The Examiner appears to be concerned that as previously presented, claim 1 did not require the fluid system to be, in the words of the Examiner from the prior Office

Action dated November 16, 2007, a “closed loop” system. The Examiner continued to express his concerns stating:

There is no language in claim 1 which requires fluid to essentially recirculate through the check valves such that the outlet of the one check valve whose inlet is connected to the common refill/evacuation location is connected to the inlet of the check valve whose outlet is connected to the common refill/evacuation location.

Office Action at pg. 13. The newly added feature of claim 1, which recites “wherein said outlet of said first check valve is in fluid communication with said inlet of said second check valve,” clearly addresses the Examiner’s concerns. Applicant submits that the amended claims of the present invention cover the “closed loop” embodiment, as described by the Examiner in the prior Office Action dated November 16, 2007.

Raines discloses a valve assembly for use in the medical field (i.e., in connection with a syringe S). In an aspiration procedure involving the Raines valve assembly, the syringe is applied to create a pressure gradient in the interior of the assembly. At a predetermined level, the pressure gradient causes a second disc 150 to bias in a flexed position (see Figure 2) that permits fluid communication between the interior of the valve assembly 10 with tubing C via a tubing connector 20. The pressure gradient causes flow through the tubing connector 20 into the interior of the assembly 10. The flow established by such pressure gradient through the tubing connector 20 is around the second disc 150 and into cannula K in the interior of the assembly 10. This pressure gradient also biases a first disc 152 onto a disc seat defined by the edges of counterbores 108 and 108' (see Figure 3). Thus, in the aspiration step, the second valve 150 is open and first valve 152 is closed. In this manner, fluid can be drawn from a source (not shown) into the assembly 10 (see Raines, col. 4, line 50 to col. 5, line 14).

Conversely, an injection procedure is carried out in Raines by reversing the above-described aspiration procedure. The pressure gradient established in the interior of the assembly 10 by injecting the syringe S acts on the valve discs 150 and 152. The pressure gradient moves the discs such that the second disc 150 abuts the rim 96 and thus occludes the bore 24, and, when the pressure is sufficient, moves the first disc 152 away from the disc seat to establish flow path 200' (see Figure 4). In this manner, fluid passes through the flow channel 200' and moves into a bore 124. The fluid drawn into the assembly 10 by the aspiration procedure is thus forced into a receiver (not shown) via the bore 124 by applying the injection step. In the injection step, the second valve 150 is closed and the first valve 152 is open (see Raines, col. 5, lines 15-37).

In contrast to amended claim 1, the Raines device does not disclose at least “a first check valve structured to permit fluid flow...wherein the application of positive pressure from an inlet/outlet port at a common refill/evacuation location causes fluid to flow from a common refill/evacuation location through said first check valve into said fluid system” and “a second check valve...further comprising an inlet of said second check valve being in fluid communication with at least a portion of said fluid system, wherein the application of negative pressure from the inlet outlet port at the common refill/evacuation location causes fluid to flow from said fluid system through said second check valve into the common refill/evacuation location, and wherein said outlet of said first check valve is in fluid communication with said inlet of said second check valve” as claimed in claim 1.

As stated by the examiner in the Office Action:

The patent to Raines discloses...a “valve assembly comprising: a first check valve (outlet disk 152) structured to permit fluid flow

therethrough...wherein the application of positive pressure (from the syringe S) from a common inlet/outlet port (where the end of the syringe meets chamber 100) at a common refill evacuation location (chamber 100) causes fluid to flow from the common refill/evacuation location (at 100) through said first check valve (152) into said fluid system...said second check (150) valve being structured to permit fluid flow therethrough in response to application of negative pressure at said outlet of said second check valve (150); and, an inlet/outlet port (channel 100 and bore 60) in fluid communication with said inlet of said first check valve (152) and said outlet of said second check valve (150) at a common refill evacuation location (100)" as recited.

In attempting to track the Examiner's argument, which tries to map the elements of claim 1 to Raines, applicant assumes hypothetically (and merely for the sake of considering the Examiner's argument) that the outlet disk 152 of Raines is the equivalent of the first check valve, and the inlet disk 150 of Raines is the equivalent of the second check valve. Referring to Figures 2 and 3 of Raines and applying the Examiner's interpretation of Raines to the language of amended claim 1, Raines does not teach all of the elements of claim 1.

Raines may appear to fit the language of a portion of claim 1. For example, the outlet disk 152 (first check valve) may be structured to permit fluid flow therethrough in response to application of positive pressure (from the syringe S being pushed forward) at the inlet of the outlet disk 152 (first check valve), further comprising an outlet 124 of the outlet disk 152 (first check valve) being in fluid communication with at least a portion of a fluid system (represented by conduit C'), wherein the application of positive pressure (from the syringe S being pushed forward) causes fluid to flow from the channel 100 (common refill/evacuation location) through said outlet disk 152 (first check valve) into said fluid system (represented by conduit C'). This appears to occur during the injection procedure of Raines.

Although Raines, as interpreted by the Examiner, appears to follow the language from a portion of claim 1, clearly Raines does not teach all of the elements of claim 1. Attempting to track the language of amended claim 1, the inlet disk 150 (second check valve) may have an outlet in fluid communication with said inlet of the outlet disk 152 (first check valve), the inlet disk 150 (second check valve) may be structured to permit fluid flow therethrough in response to application of negative pressure (from the syringe S being withdrawn) at the outlet of the inlet disk 150 (second check valve). However, as discussed above, Raines clearly does not disclose “wherein said outlet of said first check valve is in fluid communication with said inlet of said second check valve.” Clearly, the system of Raines is of a completely open loop system which does not allow, and cannot require, the outlet of the first check valve to be in fluid communication with the inlet of the second valve. Therefore, this hypothetical application of Raines does not teach all of the elements of claim 1.

Assuming next, hypothetically and merely for the sake of attempting to map the Examiner’s argument to claim 1, that the inlet disk 150 of Raines is the equivalent of the first check valve of claim 1, and the outlet disk 152 of Raines is the equivalent of the second check valve of claim 1, Raines still does not teach all of the elements of claim 1. In this configuration, the inlet disk 150 (first check valve) may be structured to permit fluid flow therethrough in response to application of positive pressure (from the conduit C) at the inlet of the inlet disk 150 (first check valve), further comprising an outlet of the inlet disk 150 (first check valve) being in fluid communication with at least a portion of a fluid system (represented by the channel 100 and the bore 60), wherein the application of positive pressure (from the conduit C) causes fluid to flow from the conduit C (common refill/evacuation location) through said inlet disk 150 (first

check valve) into said fluid system (represented by the channel 100 and the bore 60). Attempting to map this configuration to claim 1 fails because, once again, Raines fails to disclose "wherein said outlet of said first check valve is in fluid communication with said inlet of said second check valve." The outlet disk 152 (second check valve) may be structured to permit fluid flow therethrough in response to application of negative pressure at said outlet of the inlet disk (second check valve), although it is unclear how negative pressure would be applied from conduit C', given that conduit C' is the point of injection in Raines. The inlet of the outlet disk 152 (second check valve) may be in fluid communication with at least a portion of a fluid system (represented by the channel 100 and the bore 60), but the application of negative pressure (from the conduit C') does not cause fluid to flow from said fluid system (represented by the channel 100 and the bore 60) through the outlet disk 152 (second check valve) into the conduit C (common refill/evacuation location).

Therefore, even when making certain hypothetical assumptions to see how the Examiner has attempted to map the teachings of Raines to the elements of claim 1, Raines nonetheless does not disclose all of the elements of claim 1.

The structure of the assembly of claim 1 functions to permit both fluid evacuation operations and fluid refill operations to be accomplished through the "inlet/outlet port" at the "common refill/evacuation location" of the assembly. As noted in applicant's specification, operation of the claimed valve assembly provides that "different types of fluids (e.g., without limitation, engine oil, transmission fluid, hydraulic fluid, coolants, and other machine fluids) can be alternately and/or sequentially evacuated/refilled" (see para. 109). It can be seen that there are at least two kinds of fluid flows that can be passed through the "common refill/evacuation

location” of claim 1, including fluid flow associated with a refill operation and fluid flow associated with an evacuation operation.

In contrast, the Raines assembly only functions to provide fluid flow from a source (which is not shown or described in Raines), through an interior of its assembly 10, to a receiver (also not shown or described in Raines). There is no teaching or suggestion in Raines of performing an evacuation procedure, for example, by forcing the fluid to flow from the receiver back to the source through the fluid system. To accomplish this, Raines would need to provide an integrated fluid system that directly connects the receiver to the source other than through the assembly 10. Raines cannot function to perform the kinds of fluid evacuation operations that can be accomplished by the assembly recited in claim 1.

Each of independent claims 7, 37, 55, 68, and 81 are allowable for at least reasons analogous to those described above with regard to claim 1. Furthermore, claims 2-6, 8-18, 38-41, 44, 56-67, and 69 depend from, either directly or indirectly, one of independent claims 1, 7, 37, 55 or 68, and are therefore allowable for the same reasons as the independent claims.

§103(a) Rejections in View of Raines / Knobloch

Claims 5, 11, 41, and 59 stand rejected under 35 U.S.C. §103(a) as being unpatentable over Knobloch in view of Raines. As detailed above, neither Knobloch nor Raines teach all of the elements of amended claim 1, and, for analogous reasons, does not teach all of the elements of claims 7, 37, and 55. Claims 7, 37, and 55 are not anticipated by Knobloch and the defects of Knobloch are not cured by the application of Raines. Therefore, applicant submits that claims 5, 11, 41, and 59 are allowable. Claims 13, 16, and 18 depend from independent

claims 7, 37, and 55, which are not anticipated as described above. Therefore, dependent claims 5, 11, 41, and 59 are not obvious by virtue of their dependence from claims 7, 37, and 55, and on their own merits.

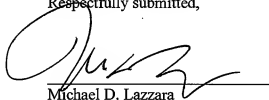
Miscellaneous

Applicant submits that the dependent claims pending herein are allowable at least by virtue of their dependency on independent claims which, as applicants describe above, are patentable over the cited references. Applicant reserves the right, however, to make supplemental arguments as may be necessary, because the dependent claims of the present application include additional features that further distinguish the claims from the cited references. A detailed discussion of these distinctions is believed to be unnecessary at this time in view of the fundamental distinctions already set forth in the above remarks.

SUMMARY

Based on the foregoing remarks, applicant respectfully requests reconsideration and allowance of all pending claims of the present application. Any questions or issues regarding this response are invited to the attention of the undersigned representative by telephone or e-mail, so that such questions or issues can be addressed expeditiously.

Respectfully submitted,



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